Dear Members of the Animal Resource Listserve,

One adult pinworm was found using our enhanced surveillance methods (pooled cecal samples of three sentinels) in one of the one-way mouse rooms in CVRI last Wednesday afternoon. I sent the worm to Cornell to confirm the ID since no eggs which are used to speciate nematodes were detected. I immediately alerted the users in the CVRI and worked out a draft action plan Wednesday afternoon for discussion with CVRI users yesterday. The two rooms in the one way CVRI zone have extremely restricted access through an air shower. The single mouse room in the 2 way CVRI zone which is the only room receiving mice from the CVRI one way zone has been on fenbendazole treatment for three weeks. The one way zone will begin fenbendazole treatment.

There will be no movement of mice from CVRI to Med School campus until fenbendazole treatment and facility sanitation is complete (as performed in KMRB B-9836 and B-9846). Personnel having been in any UofR two way rooms (per usual protocol) and CVRI are instructed not to enter the KMRB vivarium or S Wing basement and 1-6950 one way zones with simple signage.

SIMPLE signage indicating “Do not enter if you have already been in any mouse room in CVRI or any two way mouse rooms in School of Medicine and Dentistry or Meliora Hall” replaced the previous traffic signage in SMD and KMRB entries on Friday, February 13. Another sign replaced the previous traffic signage at the entry to the CVRI and all two way rooms at the UofR indicating “Do not enter KMRB vivarium or S Wing Basement Vivarium if you have been in any other rodent room”.

I must emphasize that all user training including the REQUIRED Animal Resource orientation and the Animal Resource facility tour describe the requirement never to travel from a two way zone to a one way zone and no mice may be moved between animal rooms without veterinary approval of a move form.

This pinworm finding in CVRI one way zone indicates that our enhanced sentinel monitoring is more sensitive than the traditional anal cellophane tape test and fecal flotation. The CVRI one way zone was originally populated with mice from the KMRB last year. A small number of these mice originally from the KMRB must have been parasitized with pinworms which were not detected by the routine surveillance program. Our sentinel statistics are based on the assumption of

1. at least 100 mice in the population (true for most mouse rooms)

2. each mouse having equal opportunity for infection (which is not true for MIT managed mice).

With these assumptions in place, we have a 95% probability of detecting one positive mouse out of six sentinels if there is a 40% prevalence of the disease. Increasing the numbers tested decreases the required prevalence to detect a positive. Using sentinel testing which is more sensitive (cecal exams for adult worms and screening younger mice) also improves the likelihood of detecting a positive. I have bench marked with my vets colleagues and programs at other academic institutions (Tufts, Emory, Duke, Johns Hopkins, Univ of Fla-Gainesville, Mt Sinai) as well as the Army (USAMRIID) and vendors. Our recent experience with pinworms is not unique. All vets agree that the primary cause of this national emergence of pinworms relates to the

increase in transfer of mice (infected with pinworms but yielding false negative results on quarantine) between academic institutions and subsequent breeding and colony growth. As the prevalence of the pinworms in a mouse colony increases, the more likely a sentinel program will detect a positive. I believe that our recent increase in sentinels testing positive for pinworms is a reflection of the increased prevalence from these expanding, non-commercial breeding colonies. Other academic institutions having gone through this facility wide FBZ treatment regimen subsequently implemented NEW PREVENTIVE measures which we are considering including

(1) REQUIRED rederivation of all mice from non-commercial sources before entry into a one way barrier ($1000 producing 3 litters over 3 months)

(2) permanent quarantine, testing and prophylactic treatment with permanent post-entry isolation away from the most protected barrier units and

(3) barrier enhancement of the most protected zones including enforcing strict adherence to microisolator technology, restricting personnel and adding PPE (scrubs or tyvek style suits)

I am confident that we will eliminate pinworms from those colonies affected and implement effective additional measures to prevent recurrence.

Jeff